REMARKS

Applicant has carefully studied the outstanding Official Action mailed on August 18, 2006. This response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application are respectfully requested.

The Examiner requires an abstract of the disclosure. This is submitted herewith, although it is strange that none was in the file. The present application is a national phase filing of PCT/IL2004/000488, which indeed has an abstract, and the application did reach the USPTO in its entirety.

The drawings stand objected because Figs. 1-3 should be labeled as prior art. The drawings have been corrected and are submitted herewith.

Claims 1-3 stand rejected under 35 USC §102(b) for being anticipated by Kotov et al.

Claims 4-12 stand rejected under 35 USC §103(a) as being unpatentable over Kotov et al. in view of Weiner et al.

In the rejection of claims 5 and 6, the Examiner states "With respect to claim 5 Kotov teaches the low impedance path includes a diode and while not disclosed as a freewheeling diode. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a freewheeling diode in the device of Kotov in order to switch faster if it is held such a diode is not with the scope of Kotov".

Applicant respectfully traverses these rejections, as is now explained in detail. First, we will give a short overview of two methods used for implementation of fast switching, and we will show the pertinence of the present invention and of Kotov to these approaches.

Methods for Implementation of Fast Switching

In HV pulse compression technology, there are two ways to store the electrical energy before it is delivered to the load: capacitive storage and inductive storage. In using capacitive storage, closing switches are needed to connect this energy to the load. In contrast, if inductive storage is used, opening switches are employed in order to interrupt the current in one path and make it flow through the load.

The present invention utilizes the *capacitive storage* method, as is clearly described in the specification. As fast switches, magnetic compression techniques are used. The importance of this will be described below.

Kotov shows the use of a special semiconductor as an opening switch. It is used inside the *inductive storage* part of pulse modulator, the last stage before the load. One

drawback of this technique is the need of a special opening switch, which Kotov implements by means of specialty solid-state devices, called SOS (Semiconductor Opening Switch). This switch is fast in the sense that it takes a short time to interrupt the current. This time is marked as t_0 in Fig.1 at Kotov.

It is important that the term "fast" used for such a SOS must not be confused with the term "fast" that characterizes a diode. On the contrary, a fast diode **cannot be used** in such applications. A fast diode means a diode that has a short reverse recovery time (t_{rr}). However, the SOS device must have a **long** t_{rr} to conduct the reverse current until it reaches the maximum current, as indicated by t^- in Fig.1 in Kotov.

The two types of final stages, that of Kotov and that of the present invention, have two different roles as noted above. Moreover, the present invention uses magnetic switches for fast switching the current to the load. This means that ideally, the magnetic switches, as in other magnetic switch based circuits, should have infinite impedance in one state, and zero impedance (inductance) in another, analogous to an open and close ideal switch. In contrast, in Kotov, the MS **must not** have zero inductance, because the energy is stored in this inductance.

Accordingly, the Examiner's assertion that it is obvious to use a freewheeling diode in Kotov is respectfully not true. Kotov cannot use such a diode, as explained above. Again, the role of the SOS device is not for conducting only in one direction, but instead for conducting in the reverse direction until the *reverse current* reaches its maximum value, and then quickly interrupting it. It is further noted that such a characteristic for a diode (**not** being fast and also abruptly cutting the current) is undesirable in most applications, and semiconductor manufacturers try hard to diminish this characteristic as possible. As Kotov states (in the introduction): "A large number of methods have been developed for suppressing these over-voltages".

Claim 1 has been amended to recite the wording of claim 5, and claim 5 has been cancelled for being extraneous.

Claims 1-4 and 6-12 are accordingly deemed allowable. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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